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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/821,581	04/09/2004	Muraleedharan G. Nair	MSU 4.1-703	1970
21036	7590	09/20/2007		
MCLEOD & MOYNE, P.C. 2190 COMMONS PARKWAY OKEMOS, MI 48864			EXAMINER LEITH, PATRICIA A	
			ART UNIT 1655	PAPER NUMBER
			MAIL DATE 09/20/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.		Applicant(s)	
	10/821,581		NAIR, MURALEEDHARAN G.	
	Examiner		Art Unit	
	Patricia Leith		1655	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 and 22-36 is/are pending in the application.
- 4a) Of the above claim(s) 1,7,8,14,15 and 22-36 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-6 and 9-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/9/04</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 1-15 and 22-36 are pending in the application.

Election/Restrictions

Applicant's election with traverse of Group II, claims 2-13 in the reply filed on 6/27/07 is acknowledged. Claims 7 and 8 properly belong in Group I invention because these claims are dependant upon claim 1. Claims 22-24 properly belong in Group I invention, claims 25, 28-32 and 35 properly belongs in Group V invention and claims 26-30, 33, 34 and 36 properly belong in Group VI invention.

Inventions V and VI, inadvertently overlooked in the preliminary amendment, are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different designs, modes of operation, and effects (MPEP § 802.01 and § 806.06). In the instant case, the different inventions are independent since they are not disclosed as capable of use together, they have different modes of operation, they have different functions, and/or they have different effects. One would not have to practice the various methods at the same time to practice just one method alone, as the claims comprise different method steps. The search for each of the above inventions is not co-extensive particularly with regard to the literature

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search. Further, a reference which would anticipate the invention of one group would not necessarily anticipate or even make obvious another group.

The traversal is on the ground(s) that the search for each of the Groups of I-IV would not be a burden. This is not found persuasive because there would be a serious search and examination burden if restriction were not required because one or more of the following reasons apply:

- (a) the inventions have acquired a separate status in the art in view of their different classification;
- (b) the inventions have acquired a separate status in the art due to their recognized divergent subject matter;
- (c) the inventions require a different field of search (for example, searching different classes/subclasses or electronic resources, or employing different search queries);
- (d) the prior art applicable to one invention would not likely be applicable to another invention;
- (e) the inventions are likely to raise different non-prior art issues under 35 U.S.C. 101 and/or 35 U.S.C. 112, first paragraph.

The requirement is still deemed proper and is therefore made FINAL.

Claims 1, 7-8, 14-15 and 22-36 are hereby withdrawn from examination on the merits as these claims are directed toward a non-elected invention.

Claims 2-6 and 9-13 were examined on their merits.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 2-6 and 9-13 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-28 of U.S. Patent No. 6,423,365 B1 ('365). Although the conflicting claims are not identical, they are not patentably

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distinct from each other because claims 1-28 teach all of the limitations of Instant claims 2-13 save for the particular types of cherries as claimed; e.g., Barbados cherries.

Cherries such as Barbados cherries were well known in the art at the time of '365 as disclosed by Morse (US 3,086, 915 A) (see column 1, line 36). One of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention because the claims of '365 teach that the anthocyanins can be extracted from cherries, and because Barbados cherries were a well-known type of cherry.

Specification

The use of the trademark AMBERLITE XAD has been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology. It does not appear that this trademark is accompanied by the generic terminology and therefore the Specification is objected to for this reason.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Claim Objections

Claims 9-10 and 12-13 are objected to because of the following informalities: Claims 9-10 and 12-13 all state 'in addition.' A comma should be placed after the recitation of 'in addition.' Additionally, claim 9 states 'wherein the in addition.' The word 'the' should be removed. These appear to be minor typographical/grammatical errors.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2-6 and 9-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2, part (a) recites 'the edible berries.' This phrase lacks antecedent basis in the claim.

Claim 6 recites 'the berry.' This phrase lacks clear antecedent basis in claims 2 and 3 because it is not clear if the species in the claim are referring to the pulp of a berry or to the 'berries' which were extracted in part (a) of claim 2.

Claims 9-10 and 12-13 all state wherein after step (f) the mixture is dried and combined with a dried berry pulp as a carrier. However, claim 2 already stated this in part (h). Therefore, these claims appear to be redundant and are confusing in that it appears that after step (f) the mixture is combined with pulp, and then mixed with pulp again in part (h). Correction is necessary.

Claims 3-5 and 11 are all dependant either directly or indirectly upon claim 2 and therefore possess all of the limitations of claim 2. Because these claims do not remedy the indefiniteness of claim 2, these claims are also properly rejected under this statute.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 2, 3, 5-10 and 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Langston (US 4,500,556) in view of Mozaffar et al. (US 5817354 A) in view of Owades (US 4,233,334).

Langston (US 4,500,556) disclosed a process for preparing grape anthocyanins free of organic acids and sugars for use as food colorants prepared by the following method:

De-seeded grape pomace is soaked with an equal volume of extracting solvent which contains approximately 0.075% w/v HSO₃^{sup.}-, 40% v/v ethanol and 60% v/v water. After overnight soaking, the pomace is pressed to extract the solvent containing an anthocyanin-(HSO₃^{sup.}) complex. After filtering to remove undissolved solids, the extract phase is passed through a fixed bed (2.5 cm diameter by 120 cm high) of a non-ionic, high surface area, macroporous, styrene-divinylbenzene copolymer, prepared by suspension polymerization of a monomer fraction containing in excess of 80% by weight divinylbenzene. This adsorbent polymer is employed in the form of 20 to 50 U.S. mesh size beads and is available from Rohm and Haas Co., Philadelphia, PA 19105 under the commercial designation "Amberlite XAD-4." **Thereafter, 2 bed volumes of water, at about 15.degree. C., are passed through the resin bed at the rate of 1 bed volume per hour to remove water soluble non pigmented material, sugar, organic acids and the non-adsorbed solids. The adsorbent bed**

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is then eluted with a solution of 100% ethanol containing 0.1% by weight of concentrated hydrochloric acid. The elutant, which contains anthocyanin free of HSO₃⁻ ions is then evaporated in a rotary evaporator and spray dried with a dextrin carrier. The dried product contains about 60% grape solids and 40% dextrin carrier and the overall yield of grape solids based on the solids content of the pomace is about 10%. The colorant is many times stronger in color than colorants obtained by conventional extraction methods (example 1, col. 5, emphasis added)

Therefore, it is clear that Langston provided a 'batch' of red grape pomace (edible, fresh berry) and extracted the anthocyanins as well as inherent phenolics and bioflavonoids therein and purified this mixture over an XAD-4 column via eluting the mixture with ethanol, in order to remove the organic acids and sugars. While Langston did not specifically state the term 'bioflavonoids' it is clear that the mixture must have contained bioflavonoids, as the method is carried out in almost exactly the same manner as performed by Applicant. It is deemed that the pomace of the grape contains pulp of the grape and probably contains some juice of the grape as pomace is the discarded material of the grape left after processing the grape for juice (thus, it is clear that some amount of juice is separated from some amount of pulp as Instantly claimed). It is highly reasonable to ascertain that the pomace is not 100% free from the juice of the grape. Additionally, while the example set forth above does not specifically refer to 'red grapes' *per se*, it is deemed that the grapes were red because the crux of the invention of Langston was purification of the red pigment from grapes (only red grapes contain the red anthocyanin pigments) (see col. 1, lines 13-18). Further, Langston specifically taught that the mixture obtained from purification was spray dried and added

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to a dextrin (food-grade) carrier (see above). Spray-drying would necessarily remove the solvent (water) from the extraction analyte.

Example 2 of Langston displays a dry beverage mix advantageously including the red pigment mixture produced by the extraction of grape pomace (see column 2).

Langston did not specifically teach wherein the grape pomace was blended, wherein the pomace contained juice or wherein the extracted mixture was mixed with the pulp of the grape, or wherein the mixture was mixed with the pulp of the grape and then dried or wherein the process for extraction was repeated.

Mozaffar et al. (US 5817354 A) teach that juice is conventionally extracted from fruit by blending in a blender (see Example 3, columns 12-13).

Owades (US 4,233,334) discloses a dry beverage composition which advantageously adds cellulose pulp (pulp is cellulose):

A new and improved fruit flavored, dry, powdered beverage mix adapted to be reconstituted in cold water, and the method of making same is provided. The powdered mix includes beaten cellulose pulp, which imparts an appearance and mouth-feel resembling freshly squeezed natural juice (see the Abstract).

Owades explains that the pulp is washed and dried prior to adding to the dry beverage mix (see, for example, col. 2, line 66 – col. 3, line 12).

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One of ordinary skill in the art would have been motivated to blend the grapes in order to produce the pomace as this was a conventional means for juicing fruit. It is deemed that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention in that blending fruit such as grapes to obtain the juice was considered well within the purview of the ordinary artisan at the time the invention was made.

One of ordinary skill in the art would have been motivated to add pulp to the beverage mix disclosed by Langston in order to impart an improved appearance and texture to the beverage mix. It was clear that the addition of pulp to dry beverage mixes was well-known and considered advantageous according to Owades. Thus, one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention based upon the combination of the references.

Repetition of a known process is obvious if the process is known and/or obvious. The method for extraction is deemed obvious, and repeating a method to produce additional grape colorants is deemed common knowledge, because in manufacturing, processes are repeated in order to continually provide the manufactured product.

Considering *arguendo* that the pomace of the grape did not contain juice, it is deemed that the ordinary artisan would have none-the-less been motivated to extract

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polyphenols from red grapes which included the juice in order to increase the yield of red phenolic components.

Claims 2, 3, 5-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Langston (US 4,500,556) in view of Mozaffar et al. (US 5817354 A) in view of Owades (US 4,233,334) in view of Woznicki et al. (US 4,336,244 A).

The teachings of Langston, Mozaffar et al. and Owades were discussed *supra*. None of these references specifically taught or suggested a tablet form of the colorant extract of Langston, or wherein this tablet comprised the pulp of the berry.

Woznicki et al. (US 4,336,244 A) taught colored tablets, wherein the coloring agents were derived from natural sources (such as anthocyanins) for use in food preparations and advantageously included cellulose as a carrier (see entire reference, especially the Abstract and claims 1-16).

One of ordinary skill in the art would have been motivated to formulate the colored extract of Langston into tablets in order to readily store and manufacture colored tablets for use as food coloring agents. It is clear from Woznicki et al. that this concept is well-known and used in the art of food coloring.

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Because cellulose is present in the tablets as a binder, and pulp is primarily made of cellulose, one of ordinary skill in the art would have been motivated to grind pulp of fruit such as grapes in order to add to a tablet as a binder.

Claims 2-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Langston (US 4,500,556) in view of Mozaffar et al. (US 5817354 A) in view of Owades (US 4,233,334) in view of Woznicki et al. (US 4,336,244 A) in view of Leo et al. (US 2,749,243).

The teachings of Langston, Mozaffar et al. , Owades and Woznicki et al. were discussed *supra*. None of these references specifically taught or suggested wherein the berries/pomace were quick-frozen prior to use.

Quick freezing fruits prior to manipulation of the fruit to create fruit juice for example, was well known in the art as taught by Leo et al. :

Other food products can be made from other fruits, concentrates and fruit juices, but, in general, it is preferred to start with the fresh berries either in the natural state or quick-frozen, or in the form of concentrates since by so doing the freshness of the fruit is realized and retained to the greatest possible extent (col. 6, lines 53-60)

One of ordinary skill in the art would have been motivated to use quick-frozen berries and/or pomace in order to preserve the fruit prior to processing, as advantageously taught by Leo et al.

The Supreme court has acknowledged that:

When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. **If a person of ordinary skill can implement a predictable variation...103 likely bars its patentability**...if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond that person's skill. A court must ask whether the improvement is more than the predictable use of prior-art elements according to their established functions...

...the combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results (see *KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385 U.S. 2007) emphasis added.

From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole was *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary. It would have been *prima facie* obvious for one of ordinary skill in the art at the time the invention was made to modify the method for extracting the red grape pigments as disclosed by Langston, to include obvious variations such as blending the fruit prior to extraction or adding pulp to the dry beverage mix or wherein the extract was added to the dry beverage mix and pulp and then dried, or first dried and then added to the mix since a person of ordinary skill would have had good reason to pursue the known options within his or her

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technical grasp especially when choosing from a finite number of predictable solutions. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense.

No Claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patricia Leith whose telephone number is (571) 272-0968. The examiner can normally be reached on Monday - Friday 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terry McKelvey can be reached on (571) 272-0775. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Patricia Leith

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Primary Examiner
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September 7, 2007

A handwritten signature in black ink, appearing to read "Patricia J. Ful". The signature is written in a cursive style with a large initial "P" and a long, sweeping underline.